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LIGHT-COLORED RESUPINATE POLY- PORES—I

WILLIAM A. MURRILL

In *Mycologia* for September, 1919, preliminary notes were published on 35 species of *Poria* described from North America, and, in the January number, *Trametes serpens* and *Poria medullapanis* were considered. None of Peck's species have been included because these were discussed in detail by Overholts in Bulletin 205-206 of the New York State Museum, published in June, 1919.

It is now my intention to take up various white, gray, yellow, rose-colored, and purple species that occur in temperate and tropical North America and make notes on their history, distinguishing characteristics, hosts, distribution, etc. The object I have in view is not to publish at this time a comprehensive systematic treatment of the group, but to stimulate collectors throughout the country to observe, collect, and study these difficult resupinate forms in the fresh condition, noting spore measurements, colors, and other perishable characters.

The descriptions included are mainly from dried specimens. Before the hundreds of such specimens in the herbarium here can be intelligently discussed, referred to, or classified, they must be named—and more complete descriptions can be prepared later.

The numbers following the collectors' names are those found accompanying the specimens. Sometimes they are only determination numbers and mean nothing except to the collector.

1. *PORIA ALABAMAE* (Berk. & Cooke) Cooke, Grevillea 14:
113. 1886

Polyporus Alabamae Berk. & Cooke; Berk. & Curt. Grevillea 6:
130. 1878.

Described from specimens collected by Ravenel at Gainesville, Florida, on branches of *Myrica cerifera*. Certain forms of this

species and of *P. medullapanis* resemble each other closely in external appearance. The following specimens of *P. Alabamae* have been examined:

Rav. Fungi Am. 100; Florida, *Calkins* 90, 164, 149, 183, 842, 843, 921, *Lloyd* 2130 (in part), *Ravenel*; Mississippi; Mexico, *Murrill* 679.

Polyporus roseo-isabellinus and *P. isabellinus*, described by Patouillard and Gaillard from Venezuela in 1888, should be carefully compared with *P. Alabamae*. The spores of the former are said to be ovoid, $6 \times 8 \mu$, while those of the latter are described as ovoid, $13 \times 8 \mu$. Externally, the types are much alike.

2. *PORIA VAPORARIA* (Fries) Cooke, *Grevillea* 14: 111. 1886

It is unfortunate that the type of this species does not exist in the herbarium of Persoon, but it is probably identical with *Polyporus Vaillantii* (DC.) Fries, which Hennings found in pileate form at Berlin and discussed in an illustrated article published several years before his death. This plant is common in the greenhouses of Europe, often appearing in abnormal forms. I have seen no American material to match it closely.

The plant generally called by this name, however, both in Europe and America, is Fries' misconception of Persoon's species. This is abundant with us and is quite well recognized except where confused with certain forms of *Irpex*. *Polyporus sinuosus* Fries (not *Irpex*), *Physisporus rixosus* P. Karst., *Physisporus serenus* P. Karst., and *Physisporus luteoalbus* P. Karst. are closely related European species.

The only synonym available for use appears to be *P. incerta*, which is much more appropriate than *P. vaporaria*, since the plant is not common in greenhouses—although any change is unfortunate.

***Poria incerta* (Pers.) comb. nov.**

Polyporus (Poria) vaporarius Fries, Obs. Myc. 2: 260. 1818.

Not *Poria vaporaria* Pers. Tent. Disp. Fung. 1: 70. 1797.

Boletus incertus Pers. Myc. Eur. 2: 106. 1825.

Described from Europe, on dead wood of pine and other trees. Bresadola characterizes it as follows:

"Color ex albido ligneus; pori ampli, rotundati vel angulati, non flexuosi nec daedaloides; sporae hyalinae, cylindraceo-curvulae, mobiles, $4 \times 1-1\frac{1}{4} \mu$; hyphae contextus crassiuscule tunicatae, septatae, ad septa saepe unilateraliter nodosae, $2\frac{1}{2}-3 \mu$."

This species attacks a variety of hosts, apparently preferring pine, fir, spruce, and other conifers, in the wood of which it produces a brown rot. Other hosts represented in our collection are: American elm, American linden, maple, oak, alder, hickory, beech, white cedar, yellow birch, wild black cherry, orange, and old fruit-bodies of various polypores. The following specimens have been examined:

Ellis & Ev. Fungi Columb. 101, 101b; Ellis, N. Am. Fungi 9; Karst. Finl. Fungi, 518; Rab.-Wint. Fungi Eur. 3434; Rav. Fungi Am. 711, 712, 713; Rav. Fungi Car. 19; Roum. Fungi Sel. 4306; Sydow, Myc. Mar. 1802; Poland, Eichler; England, Baker, Carlyle, Cooke, Massee; Canada, Macoun 219, 241; Maine, Murrill 1745; Connecticut, Underwood; New York, Cook, Dodge & Seaver, Underwood; New Jersey, Anderson, Ellis, Underwood; Pennsylvania, Haines & Everhart, Murrill 1299; Delaware, Commons 2169; West Virginia, Nuttall; Ohio, Lloyd 1584, 3129, Morgan 118; Indiana, Van Hook 2033; Missouri, Demetrio 659; Arkansas, Long 19851; Kansas, Bartholomew; Colorado, Seaver & Bethel; Iowa, G. W. Wilson 4; Idaho, Weir 71; Oregon, Carpenter; California, Harper; Alabama, Earle 71, Underwood; Louisiana, Atkinson (Cornell Univ. Herb. 5123), Langlois 1272, 1886, 2033, 2423; Florida, Calkins 541, 738, 799, 862, 923, 924; Lloyd 2130; Bermuda, Brown, Britton & Seaver 1371; Cuba, Earle & Murrill 478, 540, 610; Porto Rico, Stevenson 2857, 2915; Jamaica, Earle 64, 395, Murrill 340, 668, Murrill & Harris 945; St. John, Raunkiaer 190, 207; St. Croix, Raunkiaer 174; Mexico, Murrill 214, 241, 242, 263½, 631, 635, 660, 998, C. L. Smith 47.

3. PORIA SUBACIDA (Peck) Sacc.

Among the larger resupinate species having thin-walled, annual tubes, this species described by Peck in 1885 is very common as well as very conspicuous. I have collected it in many forms, in many localities, and on many different hosts, both coniferous and

deciduous. My notes refer to it in the fresh state as "milk-white all over, rather soft," "cream-colored," "fairly soft when fresh and not so yellow," etc.

Both the margin and the hymenium vary from white to yellowish according to age and position on the substratum. There are also thin, tuberculose, vesiculose, and other forms presenting unusual variety in appearance so that it is no wonder that much confusion has arisen regarding the limitations of the species and its relationship. According to Overholts, who has examined the types since I have, the spores are oblong-ellipsoid or ovoid, $4.5-6 \times 2.5-3.5 \mu$, and there are variable cystidia-like structures among the basidia. I have never noticed any prominent subacid odor.

The following named hosts are represented in our herbarium: pine, spruce, Douglas spruce, hemlock, fir, cedar, oak, maple, birch, cherry, and butternut.

Most of the specific names for this plant were published about the same time. The name in common use is retained until a fair degree of certainty can be reached regarding two or more doubtful species. I have a specimen which I collected at Lake Placid in October, 1912, on the underside of a coniferous log, which shows the depressed spots described for *P. ornatus*, but I hesitate at this time to displace *P. acida* simply on page priority without a little more evidence.

PORIA SUBACIDA (Peck) Sacc. Syll. Fung. 6: 325. 1888

?*Polyporus induratus* Peck, Ann. Rep. N. Y. State Mus. 31: 37.

1879. *Myriadoporus induratus* Peck, Bull. Torrey Club 11: 27. 1884.

?*Polyporus ornatus* Peck, Ann. Rep. N. Y. State Mus. 38: 92. 1885.

Polyporus subacidus Peck, Ann. Rep. N. Y. State Mus. 38: 92. 1885.

Poria Beaumontii Berk. & Curt.; Cooke, Grevillea 15: 26. 1886.

Poria omoema Berk.; Cooke, Grevillea 15: 26. 1886.

Poria subaurantia Berk.; Cooke, Grevillea 15: 27. 1886.

Peck's species were described from New York and the others

from South Carolina and Alabama. The following specimens have been examined in the herbarium here:

Ellis, *N. Am. Fungi* 314; Ellis & Ev. *N. Am. Fungi* 2803; Rav. *Fungi Am.* 107; Rav. *Fungi Car.* 20; Labrador, *Turner*; Canada, *Dearness*, *Macoun* 36, 99, 104, 213, 321, 409, 557; Maine, *Murrill* 2166, 2521, 2522, 2525, *P. Wilson*; Vermont, *Burt*; New Hampshire, *Underwood & Cook*, *P. Wilson*; New York, *Atkinson* (*Cornell Univ. Herb.* 4664a, 8272), *Burnham* 9, 10, *Jackson* (*Cornell Univ. Herb.* 18667), *Murrill* 597, 833, *Smith* (*Cornell Univ. Herb.* 8231), *Underwood*, *P. Wilson*; New Jersey, *Ellis*; Pennsylvania, *Gentry*, *Sumstine* 11, 12, 22; Virginia, *Long* 3778, *Murrill* 260; West Virginia, *Ellis* 11; Ohio, *Morgan* 334, 575; Indiana, *Underwood*; Missouri, *Schrenk* 8; Arkansas, *Long* 19812; Kansas, *Bartholomew* 1315; New Mexico, *Long* 3759; Colorado, *Bethel* 433; North Carolina, *Memminger*; South Carolina, *Ravenel*; Alabama, *Earle*; Louisiana, *Langlois* 2428, 2431; Florida, *Calkins* 69, 532, 533, 806; Costa Rica, *Maxon* 589.

4. *PORIA* GRISEOALBA (Peck) Sacc. *Syll. Fung.* 6: 306. 1888

Polyporus griseoalbus Peck, *Ann. Rep. N. Y. State Mus.* 38: 91. 1885.

Described as follows from specimens collected by Peck at Osceola, New York, in July:

"Effused, thin, tender, adnate, uneven, scarcely margined, indeterminate, grayish-white, with a thin pulverulent subiculum; pores very minute, subrotund, often oblique.

"The pores are sometimes collected in little heaps or tubercles as in *P. molluscus* and *P. Vaillantii*. In the dried state they are slightly tinged with creamy yellow."

The single collection at Albany is said to be rather scant, with extremely thin fructification. Overholts reports the spores to be oblong or short-cylindric, sometimes curved, often pointed at the base, $4-5 \times 1-2 \mu$. I have not had an opportunity to study the types.

5. *PORIA* CINEREA (Schw.) Cooke, *Grevillea* 14: 111. 1886

Polyporus cinereus Schw. *Trans. Amer. Phil. Soc.* 4: 159. 1832.

Described as follows by Schweinitz, who found it frequent on

dead branches of *Liriodendron* and *Juglans* at Bethlehem, Pennsylvania:

"*P. longissime effusus, angustatus, albo-marginatus et effiguratus, margine tenui subfimbriato nec tamen byssino. Tubis obliquis brevioribus, poris angustis, subflexuosis. Longitudine 4-6 unciali, 1/2-1 unciali latitudine. Totus unicolor, eleganter cinereus.*"

There are no types, either at Philadelphia or at Kew, and no one can say just what Schweinitz included under this name. Morgan reports the species from Ohio and his specimens are preserved (See *P. Caryae*). Ellis was probably influenced by Morgan when he published his exsiccati. It is just possible, though not probable, that *P. cinerea* and *P. Caryae* are synonyms, but there is no way to prove it.

6. *PORIA CARYAE* (Schw.) Cooke, *Grevillea* 14: III. 1886

Polyporus Caryae Schw. Trans. Amer. Phil. Soc. 4: 159. 1832.

Schweinitz found this species spreading a foot or more over a fallen trunk of *Carya alba* at Nazareth, Pennsylvania. His description—an unusually long one for him—is as follows:

"*P. junior tuberculoso-elevatus, interruptus, substantia spongiosa-tomentosa, margine sterili saepe tumido. Demum late effusus, magis aequabilis et subindurescens, margine tunc tenuissimo, submembranaceo, candido, praeditus. Tubis brevibus, parietibus crassiusculis, poris minoribus subrotundis et subflexuosis; interdum regulariter effusis, interdum pulvinatim in tuberculos elevatis. Ex fuliginis cinerascit. Ad pedalem longitudinem sub trunco effusus.*"

Fortunately, portions of the type are preserved, both at Philadelphia and at Kew, and they appear to match up perfectly with what Morgan called *P. cinereus* Schw. and described as follows:

"Widely effused, adnate, firm; the border narrow, thin, white-fimbriate. Pores small, unequal, subrotund, obtuse, cinereous.

"In woods on the lower side of old logs; common. The whole of a uniform ashen hue except the minute whitish fringe of the border. The growing specimens are somewhat moist, but they shrink little in drying and become quite firm. The pores measure about .20 mm. in diameter. It is an elegant species."

A fine Ohio specimen sent by Morgan to Underwood in 1894 is apparently attached to a portion of a young oak log with the bark still on it. It is now uniformly avellaneous except at the very narrow margin, which is whitish. In the same year, Underwood collected the species at Fern, Putnam Co., Indiana, but never named it.

The specimens issued by Ellis and Everhart as *Poria cinerea* in N. Am. Fungi 2306 were collected by Calkins in Florida, near Jacksonville. They mention No. 440 as a synonym, distributed as *P. argillacea* Cooke. There is a separate specimen so named in the Ellis Collection collected on rotten wood near Philadelphia in November, 1885, by Gentry.

Specimens collected by me (No. 2517) near Willimantic, Maine, in September, 1905, grew on a dead beech log. They were white with a slight cinereous cast when fresh, and are now avellaneous like those of Morgan.

Caloporus expallescent P. Karst., described from Finland, on birch wood, somewhat resembles this species. Its hymenium is primordial and difficult to compare.

7. *PORIA ARGILLACEA* (Cooke) Sacc. Syll. Fung. 6: 321. 1888
Polyporus argillaceus Cooke, Grevillea 7: 1. 1878.

The type collection was made by Harkness on rotting oak wood in the Sierra Nevada, California, at an altitude of 2,500 feet. A specimen from Harkness in the Ellis Collection was collected on rotten logs of oak at Colfax, which agrees with the Harkness Catalogue. Cooke had two numbers from Harkness, 958 and 1000, one on oak and the other on *Pinus Lambertiana*. I have seen both at Kew and my notes read: "The one on pine is probably different. Leave it out." As the oak is mentioned first, the specimen growing on it would be the type.

8. *Poria umbrinescens* sp. nov.

Irregularly effused, not always continuous, inseparable, thin, 5 cm. or more broad; margin conspicuous, broad, thin, delicate, sterile, white to slightly yellowish-discolored, consisting of minute, spreading, interwoven mycelial threads; context scarcely

differing from the margin, sometimes almost disappearing with age; hymenium uneven, owing to the inequalities of the substratum, white to yellowish or dirty-white, umbrinous in old and dried specimens; tubes oblique, appearing in patches, at first short, angular, thin-walled, irregular in shape and size, 2-3 to a mm., becoming 3 mm. in length, with long, lacerate dissepiments, soon discoloring, weathering, and falling away with age; spores copious, subglobose to ovoid, smooth, pale-umbrinous under the microscope, 4-6 μ long; cystidia none.

Type collected on a wet palm stump at Constant Spring Hotel, near Kingston, Jamaica, December 13, 1908, *W. A. & Edna L. Murrill 41*. It is rather surprising to find dark-colored spores on a plant of this character, but this accounts for the tubes becoming umbrinous with age.

9. ***Poria lacticolor*** sp. nov.

Irregularly effused for several centimeters, becoming continuous, inseparable, very thin; margin conspicuous, pure-white, unchanging, very thin, delicate; context white, a mere membrane; hymenium even, pure-white, unchanging with age or on drying; tubes oblique, angular, thin-walled, short, 4 to a mm., concolorous within, with long, toothed dissepiments; spores not found.

Type collected on a dead log in a virgin forest at Ciego de Avila, Puerto Principe Province, Cuba, March 21, 1905, *F. S. Earle & W. A. Murrill 636*. Also collected on rotten wood at Belmont, St. George's, Grenada, September 22, 1095, *Broadway*. This species somewhat resembles a coating of whitewash with fine lines in it made by the brush.

10. ***Poria niveicolor*** sp. nov.

Occurring in small, irregular patches about 3 cm. in diameter, inseparable, thin; margin conspicuous, thin, pure-white, cottony, rarely connected with rhizomorphic strands, becoming somewhat elevated with age or on drying; context thin, white, similar to the margin; hymenium quite even, becoming continuous, snow-white when fresh, with a very faint rosy-avellaneous tint in dried specimens; tubes very short, regular, angular, thin-walled, entire, 5 to a mm.; spores hyaline.

Type collected on well-rotted wood in Troy and Tyre, Cockpit

Country, Jamaica, January 12-14, 1909, *W. A. Murrill & W. Harris 1056*.

11. *Poria cremeicolor* sp. nov.

Broadly effused for many centimeters over the smooth surface of the substratum, continuous, inseparable, thin; margin conspicuous, indefinite, very thin, cremeous; context like the margin, a mere membrane; hymenium even, not glistening, uniformly cremeous, becoming very slightly darker in dried specimens; tubes regular, rounded to somewhat angular, firm, becoming thin-walled but remaining entire, less than 0.3 mm. long, 5 to a mm.; spores hyaline.

Type collected on small, hard, decorticated hardwood stems in Troy and Tyre, Cockpit Country, Jamaica, January 12-14, 1909, *W. A. Murrill & W. Harris 863*.

12. *Poria adpressa* sp. nov.

Irregularly effused for many centimeters over decorticated wood, inseparable, thin, following closely the inequalities of the surface and also occupying the crevices and depressions; margin conspicuous, thin, white to slightly yellowish, closely appressed; context thin, white; hymenium appearing in patches and then becoming fairly continuous, uneven, not glistening; tubes very oblique, arranged as in oblique-tubed forms of *Coriolellus sepium* but much smaller, about 4 to a mm., larger by confluence, firm, rather thick-walled, entire on the edges; spores hyaline.

Type collected on well-rotted, decorticated wood at Rio Gavelan, Province of Santa Clara, Cuba, March 26, 1910, *Britton, Earle & Wilson 6033*. This species has the habit of *Coriolellus sepium* when growing resupinately on an upright trunk or stump, but the tubes are minute and there is no tendency to form a pileus. Young specimens collected on corticated wood in Cuba (*Earle & Murrill 167*) and in St. John (*Raunkiaer 204*) appear to have the same kind of hymenium, but its color is slightly rosy-avellaneous, which leaves the identity of these specimens in doubt.

13. *Poria tenuipora* sp. nov.

Effused for many centimeters, covering large areas, continuous, inseparable, thin; margin cottony, pure-white even in dried

plants, inconspicuous, scarcely visible in age; context white, too thin to measure, being a mere membrane holding the tubes together; hymenium quite even, white, cremeous where bruised, with a slight rosy-avellaneous tint in dried specimens; tubes rather rigid, oblique, regular in shape and size, reaching 1 mm. in length, concolorous within, thin-walled, the mouths rounded, entire, exceedingly minute, 10 to a mm.; spores minute, hyaline.

Type collected on much-decayed wood in Troy and Tyre, Cockpit Country, Jamaica, January 12-14, 1909, *W. A. Murrill & W. Harris* 855. Also collected on a standing rotten stub in woods at Mooretown, Jamaica, November 22, 1902, *F. S. Earle* 541; and on rotten wood in the forest at Alto Cedro, Cuba, March 19-20, 1905, *F. S. Earle & W. A. Murrill* 548.

14. ***Poria Earlei*** sp. nov.

Widely effused, continuous, inseparable, about 4 mm. thick; margin inconspicuous, delicate, pure-white, scarcely apparent in older specimens; context white, practically disappearing with age; hymenium even, regular, glistening, milk-white, becoming very faintly yellowish in dried specimens; tubes angular, quite regular, white within, very thin-walled, entire to somewhat toothed, 4 mm. long, 5-7 to a mm.; spores scanty, ellipsoid, rather blunt at the ends, smooth, hyaline, $5 \times 3.5 \mu$.

Type collected on a rotten log on Rose Hill, Jamaica, 4,000 feet elevation, October 30, 1902, *F. S. Earle* 297. This species has longer and larger tubes than *P. tenuipora*, and they glisten distinctly when turned from side to side in the light.

15. ***Poria corioliiformis*** sp. nov.

Irregularly effused over fallen leaves and the surface of decayed twigs in continuous areas 1-2 cm. wide, inseparable, not very thin, following to some extent the irregularities of the substratum; margin conspicuous, broad, finely tomentose, white to cremeous, elevated at times as though about to project as a narrow pileus; context similar to the margin and quite conspicuous; hymenium somewhat uneven, cremeous, glistening; tubes quite regular, rounded to somewhat angular, 1-1.5 mm. long, cremeous within, rather firm and thick-walled for the genus, entire on the edges, 4-5 to a mm.; spores subglobose, smooth, hyaline, 4μ .

Type collected on fallen leaves and twigs in woods along the river at San Antonio, Cuba, April 20, 1903, *J. A. Shafer* 253. This may be a resupinate form of an undescribed species of *Coriolus*, closely related to *C. depauperatus*, but with smaller tubes.

16. ***Poria regularis*** sp. nov.

Forming small, rather thin patches 2 cm. or less wide, which are continuous as far as they go and do not readily separate from the substratum; margin a thin membrane of white mycelium connected with rhizomorphic strands and apparently disappearing entirely with age, leaving simply a mass of tubes; context thin, white, not apparent in age; hymenium very even and uniform, not glistening, milk-white, unchanging; tubes regular, angular, thin-walled, entire, reaching 0.5 mm. in length, 4-5 to a mm.; spores hyaline.

Type collected on a fallen, dead, corticated branch of some hardwood tree at Morce's Gap, Jamaica, a very wet locality 5,000 feet above sea-level, December 29, 30, January 2, 1908-9, *W. A. & Edna L. Murrill* 703. The abundance of moisture present probably had something to do with the unusual form of the hymenophore.

17. ***Poria polyporicola*** sp. nov.

Effused almost continuously for many centimeters over the hymenium of an old polypore, inseparable, very thin; margin pure-white, exceedingly thin, diffuse, becoming discolored with age; context not apparent; hymenium closely applied to the tubes of the polypore, regular, even, white to pale-avellaneous-umbrinous; tubes exceedingly shallow, thin-walled, entire, rounded to angular, white to slightly yellowish, 4-5 to a mm.; spores hyaline.

Type collected on an old hymenophore of *Pogonomyces hydnoides* growing on a cypress log near Fort Myers, Florida, February 29, 1916, *Paul C. Standley* 12895. Among the tubes are numerous sporophores of a minute brown species of *Orbilina*, which apparently has something to do with their discoloration.

18. ***Poria cinereicolor*** sp. nov.

Effused for several centimeters over the surface and hymenium of an old polypore, continuous, inseparable, very thin; margin

like a delicate gray cobweb on which the tubes appear in patches and then become continuous, when the mycelium and context practically disappear; hymenium ash-colored, unchanging, very even, regular, not glistening; tubes very short, rounded to angular, entire, rather thick-walled at first, 7-8 to a mm.; spores hyaline.

Type collected on both the upper and lower surfaces on an old specimen of *Ganoderma* in Castleton Gardens, Jamaica, December 14, 1908, *W. A. & Edna L. Murrill* 63. This species forms a very striking contrast with its mahogany-colored host.

19. ***Poria subavellanea*** sp. nov.

Effused in rather thin patches 3-5 cm. or more long on the underside of corticated or decorticated pine logs; margin conspicuous, pure-white, unchanging, cottony, thin, sometimes elevated, with a tendency to separate from the substratum; context thin, white, hardly apparent in age; hymenium uneven, continuous, glistening, pale-avellaneous; tubes firm, thin-walled, entire, angular, 1-2 mm. long, 4 to a mm.; spores very scanty, ovoid, smooth, hyaline, about 4μ long.

Type collected on pine bark at Auburn, Alabama, November 20, 1897, *F. S. Earle* 121. Also collected on a decorticated log of *Pinus echinata* near Womble, Arkansas, November 6, 1915, *W. H. Long* 19811. This species might be a resupinate form of some undescribed species of *Coriolus*.

20. ***Poria subcorticola*** sp. nov.

Effused for several centimeters, thin, inseparable, continuous; margin conspicuous, rather thick, persistent, white to cream-colored; context similar to the margin, persistent, apparent as a paper-thin membrane; hymenium even, white to cream-colored, not glistening, appearing in patches and finally becoming continuous; tubes mostly primordial, very shallow, angular, rather thick-walled, entire, 4-5 to a mm.; spores hyaline.

Type collected on much-decayed decorticated wood at Cuernavaca, Mexico, December 24-27, 1909, *W. A. & Edna L. Murrill* 363. Also collected on the underside of an old fruit-body of *Corioloopsis fulvocinerea* at Colima, Mexico, January 3-4, 1910, *W. A. & Edna L. Murrill* 584. The hymenium resembles that of *Poria corticola*.

21. *Poria vulgaris* (Fries) Cooke, Grevillea 14: 109. 1886

Polyporus vulgaris Fries, Syst. Myc. 1: 381. 1821.

Fries found this species very common throughout the entire year on fallen wood of pine and other trees, as well as upon leaves. He describes it as follows:

"Longe effusus, tenuis, siccus, laevis, albus, poris exiguis aequalibus.

"Ad longitudinem usque pedalem effusus, laevis, $\frac{1}{2}$ lin. crassus, detritus immutabilis, nec nisi in frustulis a ligno separabilis; margine praecipue junioris tenuissime pubescente. Pori recti vel obliqui, subrotundi."

In Saccardo's "Sylloge" it is reported on the wood of various hardwood trees and conifers from widely separated temperate and tropical regions. Bresadola discusses the species at length in his paper on fungi collected in Hungary and finds it difficult because it is so frequently sterile. He states that *Polyporus luteoalbus* P. Karst., occurring on fir wood and always sterile, is *P. vulgaris* Fries of the "Systema"; and that *forma calcea* of Fries is also sterile. The typical form, according to him, occurs on the wood of frondose trees and is always fertile, the spores being obovoid, hyaline, $3.5-4 \times 2-2.5 \mu$. I have good specimens from him of this form and can match them fairly well with American material, although the species cannot by any means be called *common* with us.

I have seen the specimens in the Fries Herbarium, which are not very satisfactory, and have one sent by him to Masee, which agrees for the most part with those from Bresadola. If we accept Bresadola's interpretation, we have a species with regular, glistening tubes, which are smaller and usually shorter than those of *P. subacida* and do not become so yellow with age or on drying. From *P. vaporaria*, it differs decidedly in microscopic characters and the tubes are easily distinguished. *P. mollusca* is much softer and yellower, although Fries included it as his variety *lutescens*.

The following specimens, mostly European, have been examined in the herbarium here. A good hunt would doubtless bring more to light.

Romell, *Fungi Scand.* 16; Sydow, *Myc. Mar.* 2201, 2814, 3422; Thüm. *Myc. Univ.* 1503; Wart. & Wint. Schweiz. Krypt. 719, Sweden, *Fries*; Finland, *Karsten*; England, *Plowright*; Hungary, *Kmet*; New Jersey, *Ellis* 348; Pennsylvania, *Murrill* 1094; West Virginia, *Nuttall* 909.

22. ***Poria Amesii*** sp. nov.

Effused for several centimeters, continuous, inseparable, 2–5 mm. thick; margin narrow, white, unchanging, at first cottony, fimbriate, and appressed, becoming membranous and elevated, rarely slightly reflexed; context very thin but visible under a lens as a gelatin-like membrane quite distinct in color from the milk-white tubes; hymenium even, continuous, glistening, white, unchanging, having normal tubes in places and elsewhere being entirely cellular and abnormal; tubes, when normal, very delicate, thin-walled, angular, subentire, 2–3 mm. long, 5–6 to a mm.; spores very abundant, ovoid, smooth, hyaline, $3 \times 2 \mu$.

Type collected on decorticated or burnt maple wood and on the hymenophores of another species of *Poria* at Valley Stream, Long Island, *Frank H. Ames* 340. These specimens were sent to me by Mr. Ames without date of collection shortly before his death.

23. ***Poria subcollapsa*** sp. nov.

Effused for several centimeters, covering small or large areas according to conditions, usually continuous, inseparable, thin; margin ordinarily very delicate, whitish, soon becoming inconspicuous, but at times rather broad and persistent; context similar to the margin, inconspicuous; hymenium not glistening, white and even when young, becoming pale-rosy-avellaneous and irregular, owing to the formation of many larger openings by the confluence of the pores; tubes oblique, rounded to angular, thin-walled, 4–5 to a mm., with slightly elongate, delicate dissepiments, which collapse to some extent with age; spores hyaline.

Type collected on a fallen dead stick at Rose Hill, Jamaica, October 24, 1902, *F. S. Earle* 68. Also collected on banana trash at Rio Piedras, Porto Rico, February, 1914, *J. A. Stevenson* 1465.

24. ***Poria monticola*** sp. nov.

Effused over large areas, continuous, inseparable, 1–3 mm. thick; margin thin, appressed, fimbriate to membranous, usually

narrow and practically disappearing with age, but at times rather thick and felty, reaching 5 mm. broad; context very thin, white, inconspicuous with age; hymenium very even, continuous, glistening, white or tinged with yellow, often showing brownish stains in dried specimens where touched with the fingers or near the margin where the tubes are young; tubes annual, large, rigid, 1-3 mm. long, rounded or somewhat angular, entire, 2-3 to a mm.; spores copious, narrowly-ellipsoid, often slightly curved and apiculate at the base, smooth, hyaline, $5-6 \times 3 \mu$.

Type collected on a decorticated log of *Pinus monticola* at Priest River, Idaho, *J. R. Weir* 61. Also on the same host in the same locality, *J. R. Weir* 57, 72, 77; on dead wood of *Pinus monticola* at Agassiz, British Columbia, *J. R. Weir* 65; and on dead wood of *Picea Engelmanni*, probably from Priest River, Idaho, *J. R. Weir* 63. All of these specimens are very uniform in appearance and represent the species in excellent fashion.

25. *Poria lacerata* sp. nov.

Effused for several centimeters, continuous, inseparable, thin; margin cottony or felty, appressed, milk-white, unchanging, narrow, practically disappearing with age; context a mere white membrane; hymenium even, continuous, milk-white, staining yellowish-brown where bruised in handling; tubes rather long, delicate, thin-walled, angular, becoming fimbriate-lacerate at maturity, 2 mm. long, about 3 to a mm.; spores copious, ellipsoid, smooth, hyaline, usually uniguttulate, $6 \times 3.5 \mu$.

Type collected on a well-rotted, decorticated log of *Quercus alba* near Womble, Arkansas, November 7, 1915, *W. H. Long* 19777. Described from a good specimen sent me by Professor Long, who refers to another number collected by him which I have not seen.

26. *Poria rimosa* sp. nov.

Effused for a few centimeters but interrupted by the irregularities of the substratum, inseparable, thin; margin very thin, membranous, milk-white and unchanging in the early stages, becoming creameous and more felty when older, always appressed; context white, inconspicuous in age; hymenium appearing in patches, at length continuous, but soon cracking transversely every few millimeters, white with a creameous tint to dull-creameous; tubes about 1 mm. long, oblique, thin-walled, angular, entire,

4 to a mm.; spores scarce, narrowly-ovoid, smooth, hyaline, $5 \times 2.5 \mu$.

Type collected on a well-rotted, decorticated log of *Juniperus monosperma* near the Gila National Forest, New Mexico, October 23, 1911, *W. H. Long & G. G. Hedgcock*. This is said by the collectors to be common, but I have only this one packet, which is without a number.

27. *Poria heteromorpha* sp. nov.

Effused for many centimeters, continuous, usually separable because the substratum is much decayed, quite thick; margin conspicuous, thin, cottony, white, becoming fulvous with age; context thin, similar to the margin; hymenium uneven, continuous, white when young, ochraceous or fulvous with age, usually reviving; tubes large, thin-walled, entire, somewhat collapsing, 1–2 mm. long, 2 to a mm., becoming much elongated with age in oblique positions, the long undulate dissepiments resembling lamellae; spores copious, subglobose to broadly ovoid, uniguttulate, smooth, hyaline, 3–4 μ long, 5 μ in the Florida specimens.

Type collected on very rotten wood in Troy and Tyre, Cockpit Country, Jamaica, January 12–14, 1909, *W. A. Murrill & W. Harris* 857. Also collected at the same time and place by *W. A. Murrill & W. Harris* 865; on very rotten wood near Port Antonio, Jamaica, December 17, 1908, *W. A. Murrill* 188; on very rotten wood at Rio Piedras, Porto Rico, July 26, 1915, *J. A. Stevenson* 2891; and on dead leaf-stalks of *Sabal Palmetto* near Ocala, Florida, August 11, 1913, *W. H. Long* 12360.

This is a species of very unusual appearance, with a hymenium varying from poroid to somewhat daedaleoid and reminding one of *Lenzites heteromorpha*. It likes wood almost reduced to humus and can be stripped off in large flakes, which are soft, flexible, and very light in weight. After the old hymenophores are discolored and appear dead, patches of fresh white tubes will arise from portions of the hymenial surface. This frequently happens, however, with annuals in tropical countries and may be due to the recurrence of rains.

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